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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,233	02/09/2007	Petra Biehl	C 2774 PCT/US	3701

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EXAMINER
VALENROD, YEVGENY

ART UNIT	PAPER NUMBER
1621	

NOTIFICATION DATE	DELIVERY MODE
12/11/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocket@foxrothschild.com

Office Action Summary	Application No.	Applicant(s)	
	10/556,233	BIEHL ET AL.	
	Examiner	Art Unit	
	YEVEGENY VALENROD	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The following is a non-final rejection in application # 10/566,233.

Rejection of claims 19-23, 26 and 28-42 under 35 U.S.C. 103(a) as being unpatentable over Scala et al in view of Williams et al. and Piispanen et al is withdrawn in view of applicants' remarks.

Rejection of claims 19-22, 24-26 and 28-42 under 35 U.S.C. 103(a) as being unpatentable over Eckey et al in view of Williams et al. and Piispanen et al is withdrawn in view of applicants' remarks.

Rejection of claims 19, 20, 23, 26-42 under 35 U.S.C. 103(a) as being unpatentable over Clinton et al in view of Williams et al. and Piispanen et al is withdrawn in view of applicants' remarks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

> said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 19-23, 26 and 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scala et al (US 4,275,222) in view of Duncan et al (US 4,548,746) and Cawse (US4,737,569).

Scope of prior art

Scala et al teach a method for producing a benzoate ester composition. In Example 1 of column 2, Scala et al. describe reacting a mixture of benzoic acid with C12-C15 linear primary alcohols (fatty alcohols) in the presence of a catalyst to produce benzoate ester composition. The alcohols in the process of Scala are in 10% excess of benzoic acid (instant claims 26 and 40).

Ascertaining the difference between prior art and instant claims

Scala et al. utilize methane sulfonic acid as a catalyst for esterification while the instant claims are limited to tin(II) oxide in combination with a phosphorus(I) compound.

Scala et al. also fail to teach procedural steps such as order of addition, temperature and pressure of the reaction as recited in the instant claims.

Secondary references

Duncan et al teach Phosphinic acid (hypophosphorous acid) acting as a catalyst in an esterification reaction (Abstract, lines 1-4). Duncam also teach that when phosphinic acid is used as a catalyst a product of improved quality is produced (Column 1, lines17-18)

Cawse teaches stannous oxide (Tin(II)oxide) as an esterification catalyst for aromatic dicarboxylic acids (column 4, lines 11-14).

Level of ordinary skill in the art

One skilled in the art is an organic chemist who is capable of repeating literature procedures and optimizing reaction conditions.

Obviousness

One skilled in the art at the time the instant invention was made would have found it obvious to carry out esterification of benzoic acid using known esterification catalysts. It would have been obvious to substitute the methane sulfonic acid catalyst of Scala with any other known esterification catalyst or combination thereof. The expected result is that the reaction would yield the same product of the same quality as obtained by Scala. The teachings of Duncan and Cawse provide evidence that both phosphinic acid and stannous oxide are known esterification catalysts. Furthermore, Duncan teaches that a higher quality product is obtained when phosphinic is utilized as a catalyst. One skilled in the art would have found it obvious to use the above mentioned catalysts alone or in combination in an esterification process with an expectation that the catalysts would perform their described function, which is catalyze an esterification reaction. Examiner considers that limitations directed to temperature, pressure, order of addition and purification techniques as features that are determined in an optimization of the process, and that such features fail to distinguish the instantly claimed process from what is already known in the art.

In order to overcome this rejection applicant can submit unexpected results, commensurate in scope to the breadth of the claims, arising from the use of the claimed catalyst composition.

Claims 19-22, 24-26 and 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eckey (US 2,182,397) in view of Duncan et al (US 4,548,746) and Cawse (US4,737,569)

Scope of prior art

Eckey teaches a method of producing esters of polyhydric alcohols of carboxylic acids (page 1, column 2, lines 34-36). Suitable acids for the process include benzoic acid (page 2 column 2 lines 6-7) and suitable alcohols include glycols (page 2, column 1, lines 58-59). Sulfuric and sulfonic acids are described as catalysts for the esterification (page 2, column 2, lines 50-53).

Ascertaining the difference between prior art and instant claims

Eckey teaches sulfuric and sulfonic acids as catalysts for the esterification while the instant claims are limited to tin(II) oxide with phosphinic acid as a catalytic mixture

Eckey also fails to teach the limitations of the instant claims that are directed to the temperature, pressure order of reagent addition and product separation and purification.

Secondary references

Duncan et al teach Phosphinic acid (hypophosphorous acid) acting as a catalyst in an esterification reaction (Abstract, lines 1-4). Duncam also teach that when phosphinic acid is used as a catalyst a product of improved quality is produced (Column 1, lines17-18)

Cawse teaches stannous oxide (Tin(II)oxide) as an esterification catalyst for aromatic dicarboxylic acids (column 4, lines 11-14).

Obviousness

One skilled in the art at the time the instant invention was made would have found it obvious to carry out esterification of benzoic acid using known esterification catalysts. It would have been obvious to substitute the sulfuric and sulfonic acids as catalysts of Eckey with any other known esterification catalyst or combination thereof. The expected result is that the reaction would yield the same product of the same quality as obtained by Eckey. The teachings of Duncan and Cawse provide evidence that both phosphinic acid and stannous oxide are known esterification catalysts. Furthermore, Duncan teaches that a higher quality product is obtained when phosphinic is utilized as a catalyst. One skilled in the art would have found it obvious to use the above mentioned catalysts alone or in combination in an esterification process with an expectation that the catalysts would perform their described function, which is catalyze an esterification reaction. Examiner considers that limitations directed to temperature, pressure, order of addition and purification techniques as features

that are determined in an optimization of the process, and that such features fail to distinguish the instantly claimed process from what is already known in the art.

In order to overcome this rejection applicant can submit unexpected results, commensurate in scope to the breadth of the claims, arising from the use of the claimed catalyst composition.

Claims 19, 20, 23, 26-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (*JACS* **1948**, *70*, 3135-6) in view of Duncan et al (US 4,548,746) and Cawse (US4,737,569)

Scope of prior art

Clinton et al. teach reaction of benzoic acid with methanol in the presence of sulfuric acid to produce methyl benzoate (page 3136, column 1, Table I).

Ascertaining the difference between instant claims and prior art

Clinton et al. are deficient in that they fail to teach instantly claimed tin(II) oxide and Phosphinic acid catalysts for the esterification.

Clinton et al. also fail to teach process conditions such as temperature, pressure, and order of addition of reagents as these parameters appear in the instant claims.

Secondary references

Duncan et al teach Phosphinic acid (hypophosphorous acid) acting as a catalyst in an esterification reaction (Abstract, lines 1-4). Duncam also teach that when phosphinic acid is used as a catalyst a product of improved quality is produced (Column 1, lines17-18)

Cawse teaches stannous oxide (Tin(II)oxide) as an esterification catalyst for aromatic dicarboxylic acids (column 4, lines 11-14).

Obviousness

One skilled in the art at the time the instant invention was made would have found it obvious to carry out esterification of benzoic acid with methanol using known esterification catalysts. It would have been obvious to substitute the sulfuric acid as catalyst of Clinton et al. with any other known esterification catalyst or combination thereof. The expected result is that the reaction would yield the same product of the same quality as obtained by Clinton et al. The teachings of Duncan and Cawse provide evidence that both phosphinic acid and stannous oxide are known esterification catalysts. Furthermore, Duncan teaches that a higher quality product is obtained when phosphinic is utilized as a catalyst. One skilled in the art would have found it obvious to use the above mentioned catalysts alone or in combination in an esterification process with an expectation that the catalysts would perform their described function, which is catalyze an esterification reaction. Examiner considers that limitations directed to temperature, pressure, order of addition and purification techniques as features

that are determined in an optimization of the process, and that such features fail to distinguish the instantly claimed process from what is already known in the art.

In order to overcome this rejection applicant can submit unexpected results, commensurate in scope to the breadth of the claims, arising from the use of the claimed catalyst composition.

Reply to applicants' argument of regarding unexpected results

Applicant has argued that the instantly claimed process is superior to the known methods due to unexpected results. Unexpected results are based on the quality of the product produced without the need of further purification (see remarks page 4, lines 3-5). Examiner would like to point out that the instant claims do not limit the process to conditions that exclude purification steps. The independent claim uses "comprising language" which opens the claimed process to further treatment of the product. In order to rely on unexpected results the claims must be commensurate in scope with the said unexpected result. As it stands the instant claims are not requiring that no purification steps are performed and therefore the references applied above meet the limitations of the claims. For example it is unclear if any phosphorus (I) compound will result a product of cosmetic quality. The specification exemplifies phosphorus (I) acid, but what about esters? Will addition of a phosphinic aster result in a higher quality product?

Conclusion

Claims 19-42 are pending

Claims 19-42 are rejected

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

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